

## **Soil Conservation Agriculture practices and Farming System adapted to local condition (Marche Region – Italy)**

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Marche Region

### **OUTLINE**

- ✓ Geographical overview of study area
- ✓ Concept of “Land”
- ✓ Management System and Farm Management System
- ✓ Farm Management System and related Policies
- ✓ Soil conservation practices – Towards Sustainable Agriculture
- ✓ Conclusions

## Geographical overview of study area

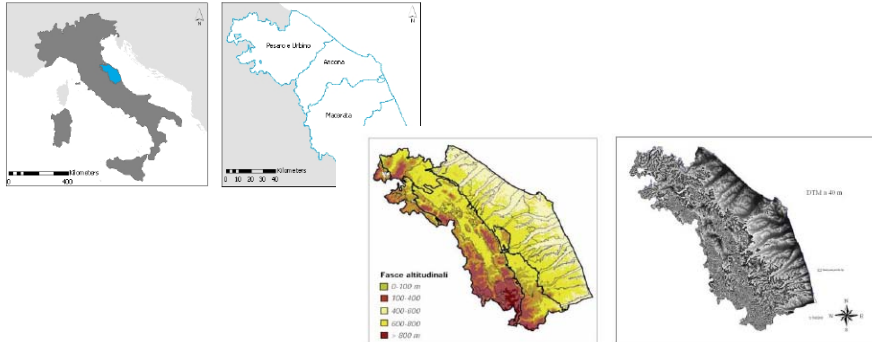
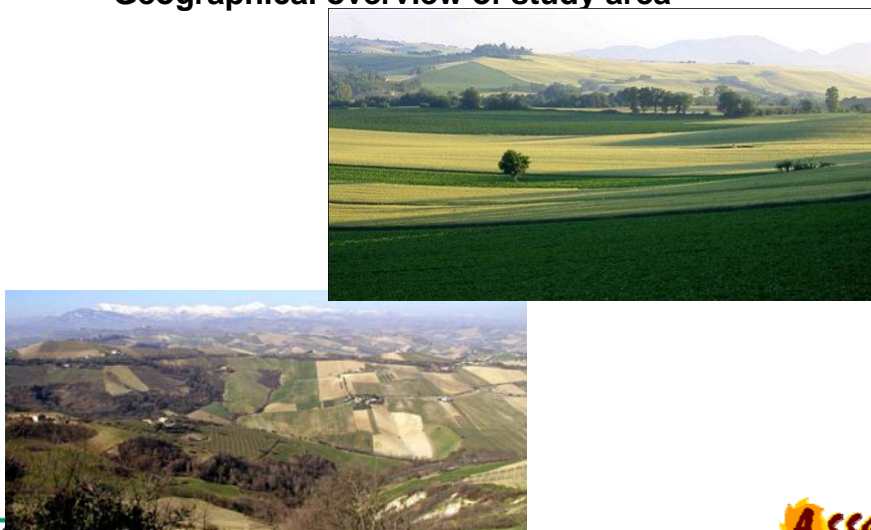


Table 1.2 Relief distributions in the Marche

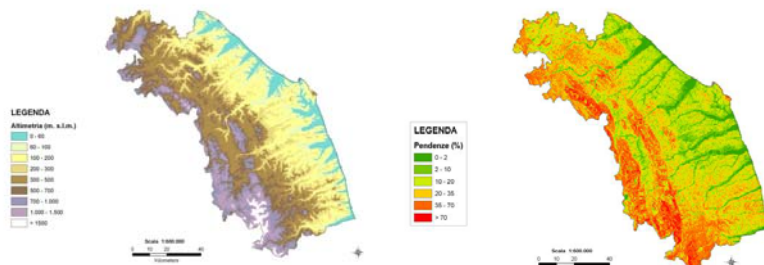
landscape	Area	Percentage
Coastal hills (< 700m)	3.165 km <sup>2</sup>	33%
Inland hills (< 700m)	3.508 km <sup>2</sup>	36%
Inland mountains (> 700m)	3.022 km <sup>2</sup>	31%

## Geographical overview of study area



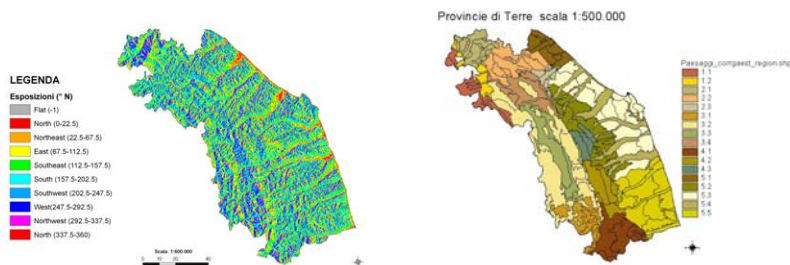
### Concept of "Land"

The term **Land** expresses a wider concept than the term soil. We can state that **land** is composed of a soil with a specific morphology and climatic situation. **Land** does not only refer to soil, but includes geology, morphology, climate, hydrology, vegetation and fauna, including insects and micro fauna with their diseases.



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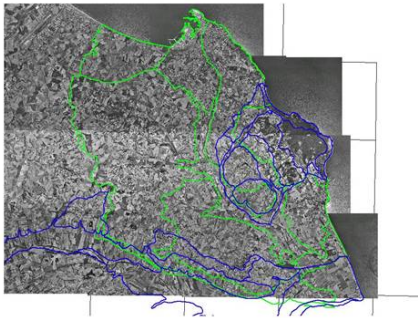
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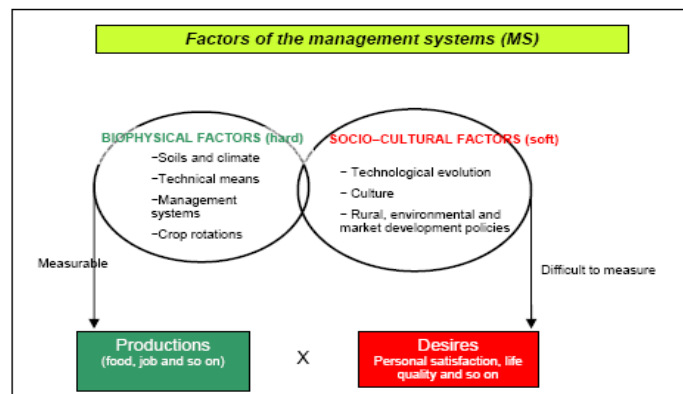
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S.S.T. e G.U.T.



## Management System and Farm Management System



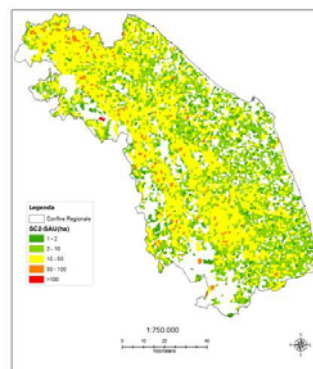
## Management System and Farm Management System

A "Management System" (MS) means the complex of components allowing to evaluate the management of the cultivated lands over time. The systems' components are crops, soil and other environmental factors interacting with each other, subjected to a human activities.

The "Farm Management System" concept goes beyond the meaning of productive cycle of single crop but is the management concerns the whole farm management over a long period and within a precise area (Land Unit).

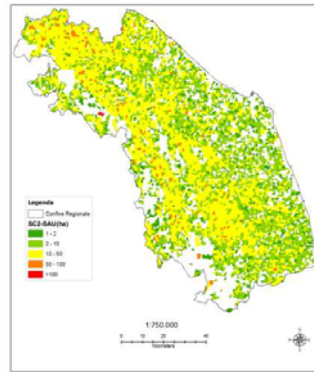
## Management System distribution within Marche Region

- MS1 Crop rotation (no fodder);
- MS2 Fodder and Forage Crops;
- MS3 Pasture
- MS4 Outdoor vegetable crops
- MS5 Fruit orchards
- MS6 Kiwi
- MS7 Grapevines
- MS8 SRF (Short Rotation Forestry)
- MS9 Wood Plantations
- MS10 Forest
- MS11 Olive groves
- MS12 Set Aside
- MS13 Truffle Grounds
- MS14 Other Management systems

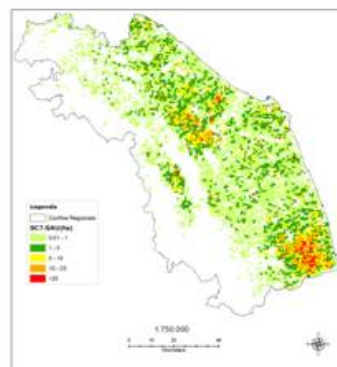
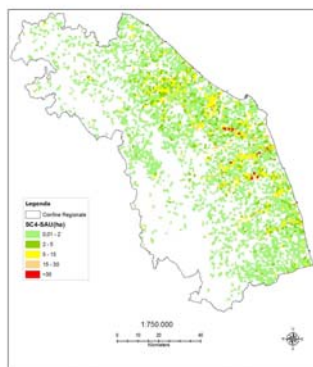


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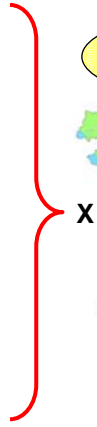


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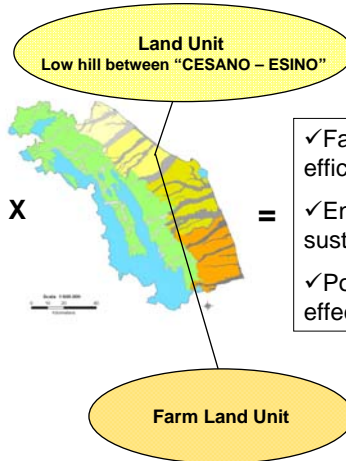


### Farm Management System

- Land Cover
- Intercrops
- Fertilization
- Agricultural Practices
- Controlled traffic tramlines



### Land



### Integrated Assessment

- ✓ Farm production efficiency
- ✓ Environmental sustainability
- ✓ Policy effectiveness

### Policies

#### Common Agricultural Policy (CAP)

#### Cross Compliance

- GAEC
- SMR

- Agricultural hydraulic system safety
- Stubble and crop residues management
- Soil structure safety
- Agricultural crop rotation

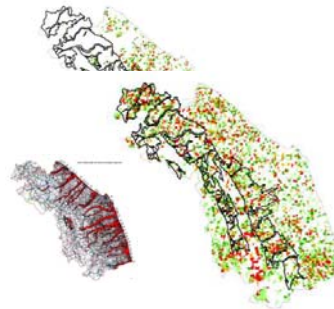
Dir.676/91 - Nitrate

(Dir.79/409 – Dir. 92/43) Bird, Habitat



#### PSR 2000 2006

MEASURES Sustainable Agriculture F1;F2;



### Soil Conservation practices

Agricultural Rural		Industrial Rural		Post-Industrial Rural		
1950	1960	1970	1980	1990	2000	2009
		Increase M.S. type 1 Increase Tillage		Variation Management S. Reduces Tillage  <b>Increase difficulties:</b> No Tillage; Practices Combined; Cover Crop and Intercrop		



$$\text{Soil Conservation Practices} = \text{Land} \times \text{F. Manag. S.} \times \text{S. Degradation P.} \times \text{Policies} \times \text{Mark.}$$

Factors Dynamics and forecast difficulty



ON-GOING MONITORING NETWORK

### Conclusions

The **soil conservation** can only be achieved through a deep knowledge of the **soil itself** and the delicate balances that maintain its many functionality.

The concept of "**territoriality**" is to be taken into consideration in the development of measures and policies in the area.

The **Conservation Agriculture** can not be interpreted as a series of separate practices (minimum tillage, sod seeding, reduce tillage, cover crops etc.) but must be analyzed in relation to the concept of "territoriality" and based on the characteristics and quality of the soil .

The I° pillar of CAP, with the environmental conditions, provides an important new element in the direction of environmental protection. With the II° pillar of CAP, the concept of "territoriality" is fully respected. CAP reform allows the transition to a more local scale and it is able to define rules for the implementation focused on the area of intervention.

The effectiveness of policies and measures implemented should be determined through a **monitoring network**



## *ACKNOWLEDGMENTS*

*Thanks for your attention*

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